

**RECHARGING THE PLANET.  
RECYCLING YOUR BATTERIES.™**



# Wisdom from the Field: Ins-and-Outs of Developing a Top Recycling Program

May 10, 2011

Harvey Stewart, NAVFAC SW  
Todd Ellis, Call2Recycle



Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>10 MAY 2011</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2011 to 00-00-2011</b>	
4. TITLE AND SUBTITLE <b>Wisdom from the Field: Ins-and-Outs of Developing a Top Recycling Program</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Naval Facilities Engineering Command Southwest,1220 Pacific Highway,San Diego,CA,92132-5190</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>Presented at the NDIA Environment, Energy Security &amp; Sustainability (E2S2) Symposium &amp; Exhibition held 9-12 May 2011 in New Orleans, LA.</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>15</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

# MODERN (MOBILE) MILITARY

Batteries power thousands of devices for soldier activity and across installations.

- ... Field communication equip. (radios, laptops)
- ... Night vision goggles & flashlights
- ... GPS units
- ... Secondary power units



3 Day mission in Afghanistan – 20-35 lbs of up to 7 different types of batteries\*.

Although the individual devices may vary, each military branch uses a significant amount of batteries in their every day operations!



\* Army, Marines Face Uphill Battle To Lighten Troops' Battery Load , May 2011; By Sandra I. Erwin

# BATTERY DISPOSAL



Battery disposal for the military  
can be . . .

- . . . Expensive
- . . . Complicated
- . . . “Unclear” – Final Disposition



## NAVFAC SW

BATTERIES everywhere!

Cost of \$1.50/lb for disposal as UW.

Can we be “GREENER”?!?!?



One of ten facilities engineering commands (FECs) in NAVFAC (over 3,400 Federal employees) & responsible for public works, planning, engineering/design, construction, real estate, environmental services, and acquisition / disposal of facilities and real estate in a six state area.



## STEP 1 – ESTABLISH GOAL AND APPROACH

### GOAL:

Implement a fiscally responsible and environmentally sound recycling program to divert rechargeable batteries from the Universal Waste stream for the entire CNRSW footprint.

### APPROACH:

Domino Theory . . . The FECs are uniquely positioned to promote the Navy's participation region-wide.





## STEP 2 - SERVICE VENDOR

What are others doing - why  
“reinvent the wheel”!?!?

More than a Vendor, find a  
PARTNER!



Recharging the planet. Recycling your batteries.™

The Pentagon supports green business practices and sustainability through its partnership with Call2Recycle, a free and easy battery and cell phone recycling program. Drop off your used rechargeable batteries and old cell phones at any one of these locations:

RECYCLE TODAY!  
TOMORROW DEPENDS ON IT.



Room 2E1040  
Pentagon Building  
Manager's Office

Room 5E320  
Pentagon Safety Office

Room 5E330A  
Pentagon Environmental  
Office



# CALL2RECYCLE®

Non profit organization of manufacturers - no competitive sourcing issues.

Program is simple – collect and recycle your rechargeable batteries at no cost . . . NO SHIPPING OR PROCESSING COSTS in CONUS.







## STEP 4 - THE “BUY IN”



Within 2 hours NAVFAC footprint in Metro San Diego was on board!

All hands on Deck Meeting –  
What a BRILLIANT Idea!



## STEP 5 – IMPLEMENTATION & TRAINING



### **Where do you collect?**

Haz Waste Facility/90 Day Site or TSDF or individual Units/Offices . . . All NAVFAC SW installations are handling through HW or TSDF.

### **How do you collect?**

“Milk Runs” vs. Units Drop Off



### **How are you shipping?**

Collection Boxes – NAS Fallon, NV

Bulk Shipping – NB San Diego, CA



# STEP 5 – IMPLEMENTATION & TRAINING

Vendor Capabilities  
Safety & Comp. Manager  
Handouts  
Reports

Internal Capabilities  
SOP's  
Tech Training



## 5 SIMPLE STEPS FOR SAFE RECHARGEABLE BATTERY AND CELL PHONE RECYCLING

- Step 1**  
**DISPLAY** your Call2Recycle® collection box in a monitored, but viewable, location. Need more boxes? Call 1-877-723-1297 or email [customerservice@call2recycle.org](mailto:customerservice@call2recycle.org) to receive your boxes.
- Step 2**  
**INSERT** one battery or cell phone into a provided bag. For big batteries OR if no bag is available, tape the battery terminals with electrical, duct or masking tape.
- Step 3**  
**PLACE** the bag (or battery with taped terminals) in box.
- Step 4**  
**DOUBLE CHECK** once the box is full:  
- No trash in the box  
- Don't overfill box, (if box breaks, use a new one.)  
- Every battery or phone must be in a bag (or taped)
- Step 5**  
**SECURE** the box in the manner shown and write your return address on the label before shipping.

### Batteries and Cell Phones Accepted:

Rechargeable Ni-MH (Nickel Metal Hydride)  
Rechargeable Ni-Cd (Nickel Cadmium)  
Rechargeable Ni-Zn (Nickel Zinc)  
Rechargeable Li-Ion (Lithium Ion)  
Small Sealed Lead Acid (SSLA/Pb)  
All models of cell phones and their batteries up to 11 pounds each

### Batteries NOT Accepted:

Alkaline, Lithium and other Non-Rechargeable batteries  
Wet cell Ni-Cd  
Wet cell lead acid vehicle batteries

call2recycle®



Recharging the planet. Recycling your batteries.™

call2recycle®

## Battery Recycling Guide

### Ni-MH (Nickel Metal Hydride)



Nickel Metal Hydride (Ni-MH) performs well in high drain devices and can be recharged up to 1,000 times before it needs to be recycled.  
Ni-MH batteries can typically be found in cordless power tools, digital cameras, two-way radios and cordless phones.



### Ni-Cd (Nickel Cadmium)



Nickel Cadmium (Ni-Cd) has a long shelf life and is considered one of the most rugged and durable rechargeable batteries. It can be recharged up to 1,000 times before it needs to be recycled.  
Ni-Cd can typically be found in cordless power tools, digital cameras, two-way radios and cordless phones.



### SSLA/Pb (Small Sealed Lead Acid)



Small Sealed Lead Acid (SSLA/Pb) batteries are simple to manufacture and have one of the lowest discharge rates of any rechargeable battery.  
SSLA/Pb can typically be found in emergency devices, emergency exit signs, security systems, mobility scooters and UPS back-ups.



### Li-Ion (Lithium Ion)



Lithium Ion (Li-Ion) is a smaller, lighter battery technology that can hold its charge for long periods of time.  
Li-Ion can typically be found in cell phones, laptops, two-way radios, and cordless power tools.



### Ni-Zn (Nickel Zinc)



Nickel Zinc (Ni-Zn) batteries are new to the marketplace, typically offered to consumer as AA batteries.  
Ni-Zn batteries are a popular option for digital cameras, wireless keyboards and other small electronics.



For proper handling, seal batteries in bags or tape the battery terminals, and place in appropriate container (for example, the Call2Recycle collection box) for recycling.

[call2recycle.org](http://call2recycle.org)

# STEP 6 - MAINTENANCE

Track activity.

Constantly evolving.



Recharging the planet. Recycling your batteries.™

Run Date: 4/23/2011

## Site Summary Report Naval Base Coronado-North Island

Call2Recycle ID: 138589  
Enrolled: November 02, 2010

Store ID: EPA ID CA7170080018  
HW Facility: Read Rd B-1808  
San Diego, CA 92136

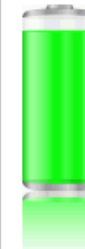
Batteries / Cell Phones Collected From 1/1/2011 To 3/31/2011

### Rechargeable Batteries

	Weight (lbs)
Nickel Cadmium (Ni-Cd)	584
Lithium Ion (Li-Ion)	89
Nickel Metal Hydride (Ni-MH)	757
Small Sealed Lead Acid (SSLA/Pb)	2,120
<b>Total:</b>	<b>3,550</b>

### Non-Rechargeable Batteries / Cell Phones

	Weight (lbs)
Lithium	0
<b>Total:</b>	<b>0</b>



### Fully Charged!

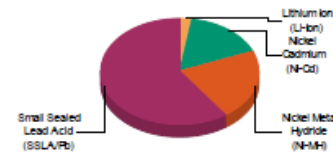
You Last Sent a Box to Call2Recycle  
On March 5, 2011.  
(43 Days Ago)

For the Reporting Period You Have:  
Sent in **8 Boxes**  
Collected a Total of **3,550 lbs**  
Returned **0 Cell Phones**

**Fully Charged** - You last recycled with Call2Recycle within 6 months  
**Time To Recharge** - You last recycled with Call2Recycle between 6 months and 1 year ago  
**Drained** - You last recycled with Call2Recycle more than 1 year ago

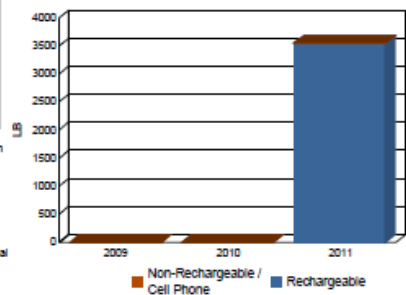
### Collection Breakdown

Weights in lbs



Lithium	0.0%
Lithium Ion (Li-Ion)	2.5%
Nickel Cadmium (Ni-Cd)	16.3%
Nickel Metal Hydride (Ni-MH)	21.3%
Small Sealed Lead Acid (SSLA/Pb)	59.9%
<b>Total</b>	<b>100.0%</b>

### 3 Year Trend



Call2Recycle Account Manager: Sean Burchill  
sburchill@call2recycle.org

# CHALLENGES

Communicating the message – how do you effectively gain support for the program (the “change” factor)?

On-going training for multiple POC's throughout installation.

Every battery not created equal - only rechargeable batteries.





# SUMMARY



Battery RECYCLING for NAVFAC SW is . . .

. . . **FREE** – Estimated savings for METRO SAN DIEGO is \$87K this FY.

. . . **SIMPLE** – Easily integrated into existing collection efforts.

. . . **TRANSPARENT** – Full compliance with legal requirements in the State of California & improves sustainability posture for CNRSW.



# QUESTIONS

Harvey Stewart

HW Program Manager

NAVFAC SW

619-532-3840/DSN 522

[Harve.stewart@navy.mil](mailto:Harve.stewart@navy.mil)

Todd Ellis

Account Manager, Military (Booth #710)

Call2Recycle®

678-218-1086

[tellis@call2recycle.org](mailto:tellis@call2recycle.org)

